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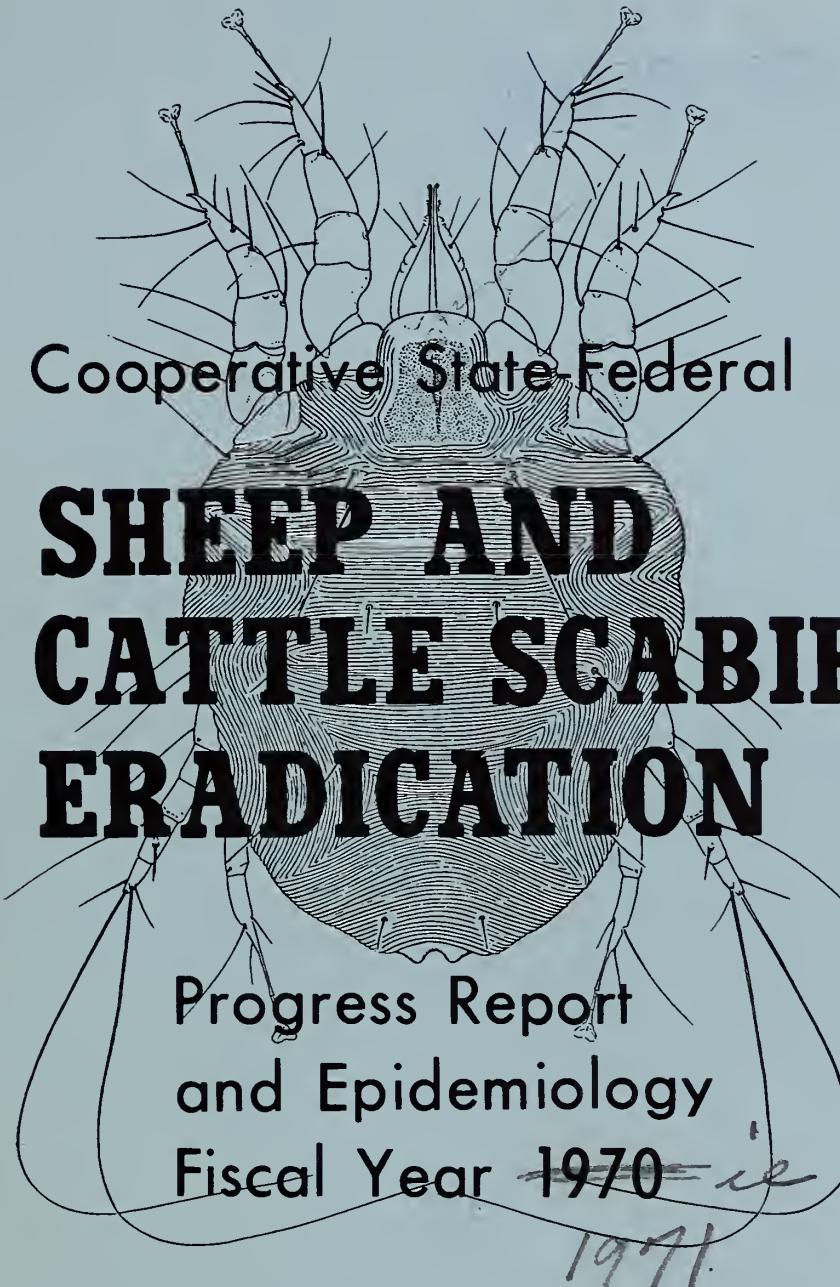
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Cooperative State-Federal
**SHEEP AND
CATTLE SCABIES
ERADICATION**

Progress Report
and Epidemiology
Fiscal Year ~~1970~~ *1971*

Animal and Plant Health Inspection Service
UNITED STATES DEPARTMENT OF AGRICULTURE

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CAUTION: Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife--if they are not handled or applied properly. Use all pesticides selectively and carefully. Follow recommended practices for the disposal of surplus pesticides and pesticide containers.



Prepared by
Animal Health Programs
Veterinary Services
Animal and Plant Health Inspection Service
U.S. Department of Agriculture
Hyattsville, Maryland 20782

COOPERATIVE STATE-FEDERAL
SHEEP AND CATTLE SCABIES ERADICATION
Progress Report and Epidemiology
Fiscal Year 1971

SHEEP SCABIES

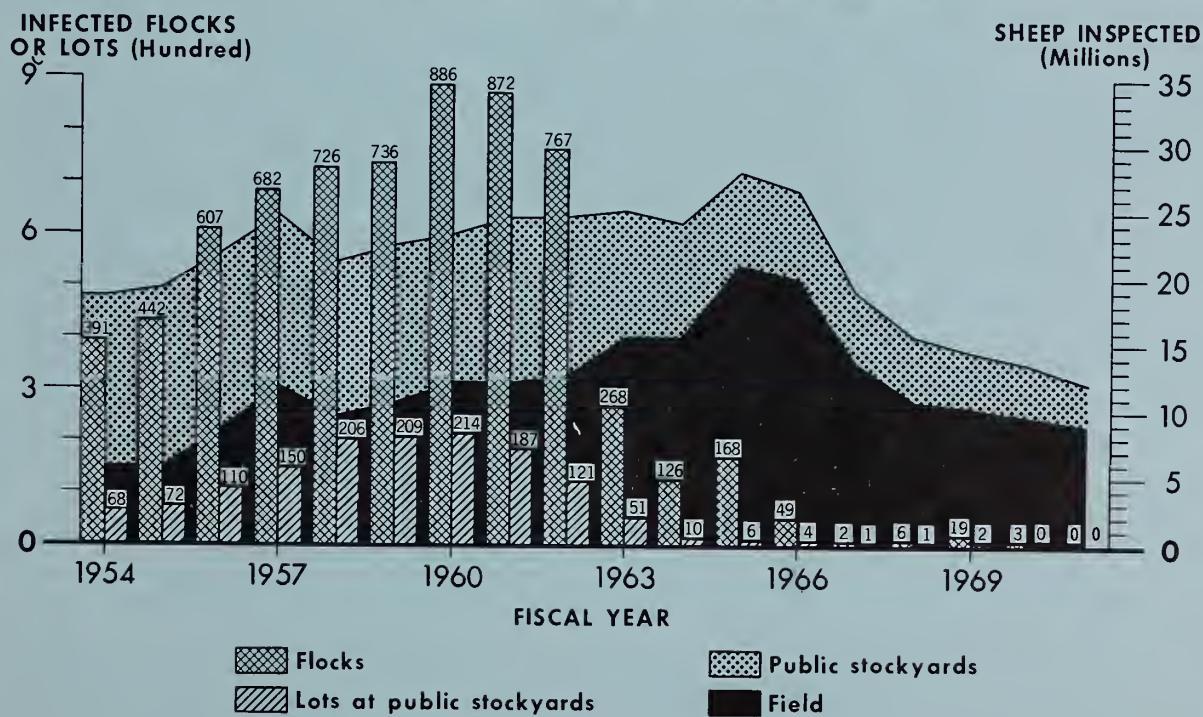
Psoroptic sheep scabies was not reported during FY 1971. This is probably the first year that it was not reported in the United States as its introduction onto the North American continent antedates the formation of the United States.

Vigilance is necessary to assure us that no infected flock remains either because it was missed or because infection was masked through use of pesticides. For some time, it has been accepted that a high level of surveillance must be maintained without disclosure of scabies for a period of no less than 3 years before we claim that we are free of psoroptic sheep scabies.

Chorioptic sheep scabies was reported from five States. These outbreaks involved 499 sheep in six flocks. Disclosure of chorioptic sheep scabies is an indication of high quality inspection.

The decrease of inspection from 9,769,612 on farms and ranches in FY 1970 to 9,042,397 in FY 1971 is cause for concern, particularly as the greatest percentage of decrease appears to occur in those sections of the country in which psoroptic sheep scabies was most recently disclosed.

PSOROPTIC SHEEP SCABIES ERADICATION



Amendments to Part 74 (9 CFR) - FY 1971

Part 74 (9 CFR) was amended effective July 4, 1971, removing Gloucester and Hunterdon Counties, N. J., from the Infected-Eradication Area and placing them in the Sheep Scabies Free Area.

PSOROPTIC SHEEP SCABIES. Fiscal Year 1971

State or Territory	Infected			Inspections		Dippings	
	Counties	Flocks	Sheep	Goats	Sheep	Goats	Sheep
	Number	Number	Number	Number	Number	Number	Number
Alabama -----	--	--	--	--	3,938	--	--
Alaska -----	--	--	--	--	9,000	--	--
Arizona -----	--	--	--	1,229	62,350	--	--
Arkansas -----	--	--	--	--	4,833	--	--
California -----	--	--	--	3,750	605,235	--	79
Colorado -----	--	--	--	371	298,147	--	--
Connecticut -----	--	--	--	2	1,826	--	32
Delaware -----	--	--	--	--	3,092	--	--
Florida -----	--	--	--	--	3,317	--	--
Georgia -----	--	--	--	6,118	1,639	--	--
Hawaii -----	--	--	--	2	1,002	--	--
Idaho -----	--	--	--	--	1,218,911	--	8
Illinois -----	--	--	--	--	465,146	--	331
Indiana -----	--	--	--	--	67,736	--	--
Iowa -----	--	--	--	--	111,024	--	307
Kansas -----	--	--	--	30	28,915	--	--
Kentucky -----	--	--	--	17	73,520	--	--
Louisiana -----	--	--	--	--	30,701	--	--
Maine -----	--	--	--	--	3,815	--	--
Maryland -----	--	--	--	100	24,261	262	--
Massachusetts -----	--	--	--	--	1,203	--	--
Michigan -----	--	--	--	261	107,414	--	--
Minnesota -----	--	--	--	--	67,855	--	--
Mississippi -----	--	--	--	--	5,799	--	--
Missouri -----	--	--	--	--	43,022	--	220
Montana -----	--	--	--	25	228,018	--	--
Nebraska -----	--	--	--	2	75,278	--	--
Nevada -----	--	--	--	--	34,475	--	--
New Hampshire -----	--	--	--	--	1,466	--	--
New Jersey -----	--	--	--	--	12,977	--	--
New Mexico -----	--	--	--	--	570,701	--	--
New York -----	--	--	--	--	59,977	--	--
North Carolina -----	--	--	--	--	13,687	--	--
North Dakota -----	--	--	--	--	64,381	--	--
Ohio -----	--	--	--	--	247,443	--	--
Oklahoma -----	--	--	--	13	49,405	--	--
Oregon -----	--	--	--	--	208,929	--	--
Pennsylvania -----	--	--	--	--	160,296	--	--
Rhode Island -----	--	--	--	--	1,039	--	--
South Carolina -----	--	--	--	--	822	--	--
South Dakota -----	--	--	--	--	23,129	--	--
Tennessee -----	--	--	--	--	24,108	--	--
Texas -----	--	--	--	505,222	2,043,133	--	271
Utah -----	--	--	--	79	743,622	--	1,178
Vermont -----	--	--	--	--	1,603	--	--
Virginia -----	--	--	--	--	140,302	--	--
Washington -----	--	--	--	--	72,000	--	--
West Virginia -----	--	--	--	25	147,239	--	775
Wisconsin -----	--	--	--	--	17,631	--	1
Wyoming -----	--	--	--	--	855,618	--	--
Puerto Rico -----	--	--	--	1,510	1,107	--	--
Virgin Islands -----	--	--	--	197	310	--	--
Totals:	--	--	--	518,953	9,042,397	262	3,202

PSOROPTIC SHEEP SCABIES

Program Activities Fiscal Years 1961 Through 1971

Fiscal Year	INFECTED			
	States	Counties	Flocks 1/	Lots at public stkyds.
	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>
1961	24	296	872	187
1962	24	316	767	121
1963	21	180	268	51
1964	15	88	126	10
1965	18	91	168	6
1966	9	34	49	4
1967	2	2	2	2
1968	3	6	6	1
1969	5	16	19	2
1970	1	2	3	--
1971	--	--	--	--

1/ Includes infected lots located at public stockyards.

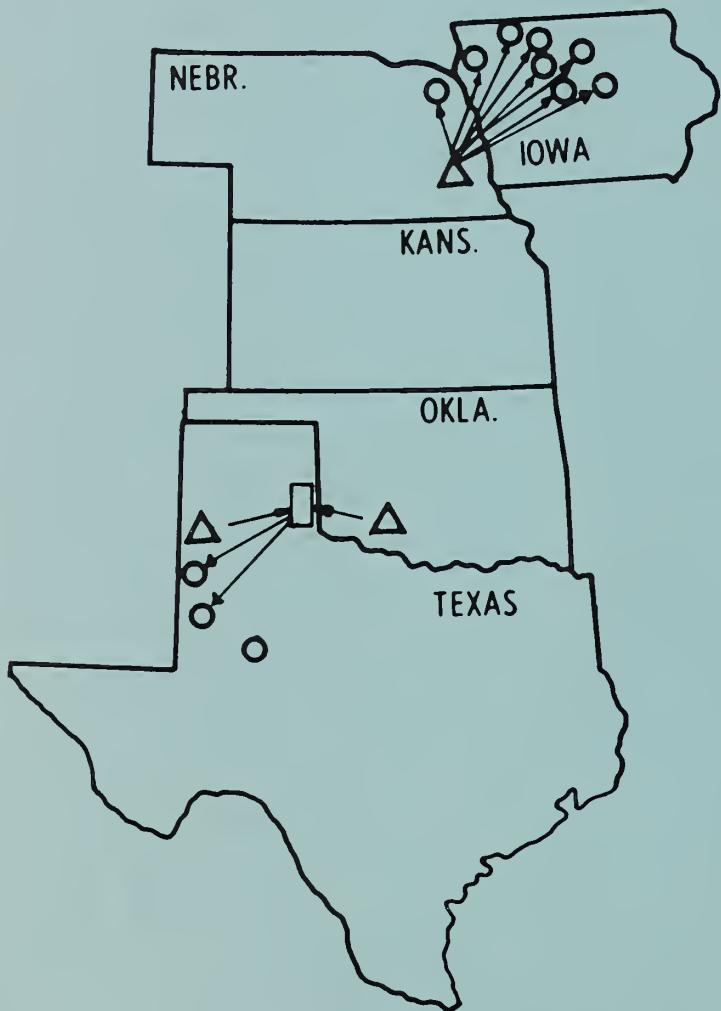
Fiscal Year	INSPECTIONS		DIPPINGS	
	At public stockyards 1/	Other	At public stockyards	Other
	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>
1961	12,304,306	12,031,249	350,339	506,745
1962	11,722,578	12,771,677	303,196	591,231
1963	9,769,549	15,530,561	299,291	843,447
1964	8,509,121	15,528,685	155,126	343,145
1965	7,123,955	21,085,187	156,762	367,231
1966	6,543,109	20,010,807	132,963	405,629
1967	5,532,225	13,745,349	74,964	107,117
1968	5,019,332	10,780,074	5,176	160,349
1969	4,297,926	10,265,723	20	40,802
1970	3,833,231	9,769,612	77	12,110
1971	3,072,946	9,042,397	--	3,202

2/ Includes inspections of goats.

CATTLE SCABIES

The cattle scabies eradication program was marked by an increase in the number of psoroptic-infected lots from one in FY 1970 to 11 in FY 1971. The 11 infected lots can be divided into three separate outbreaks: one involving eight lots in Nebraska and Iowa; the second involving two feedlots in Texas; and the third, a single feedlot in Texas.

The epidemiological investigation for each outbreak was very extensive and resulted in inspection of entire areas in Texas and Oklahoma. Extensive as the investigation and inspection were, no infected source herds were found. This may be due to failure to conduct either an extensive or intensive an investigation as necessary, the possibility that the source herd or herds were no longer in existence, or that the use of pesticides had hidden the infection.



RELATIONSHIP OF OUTBREAKS FISCAL YEAR 1971

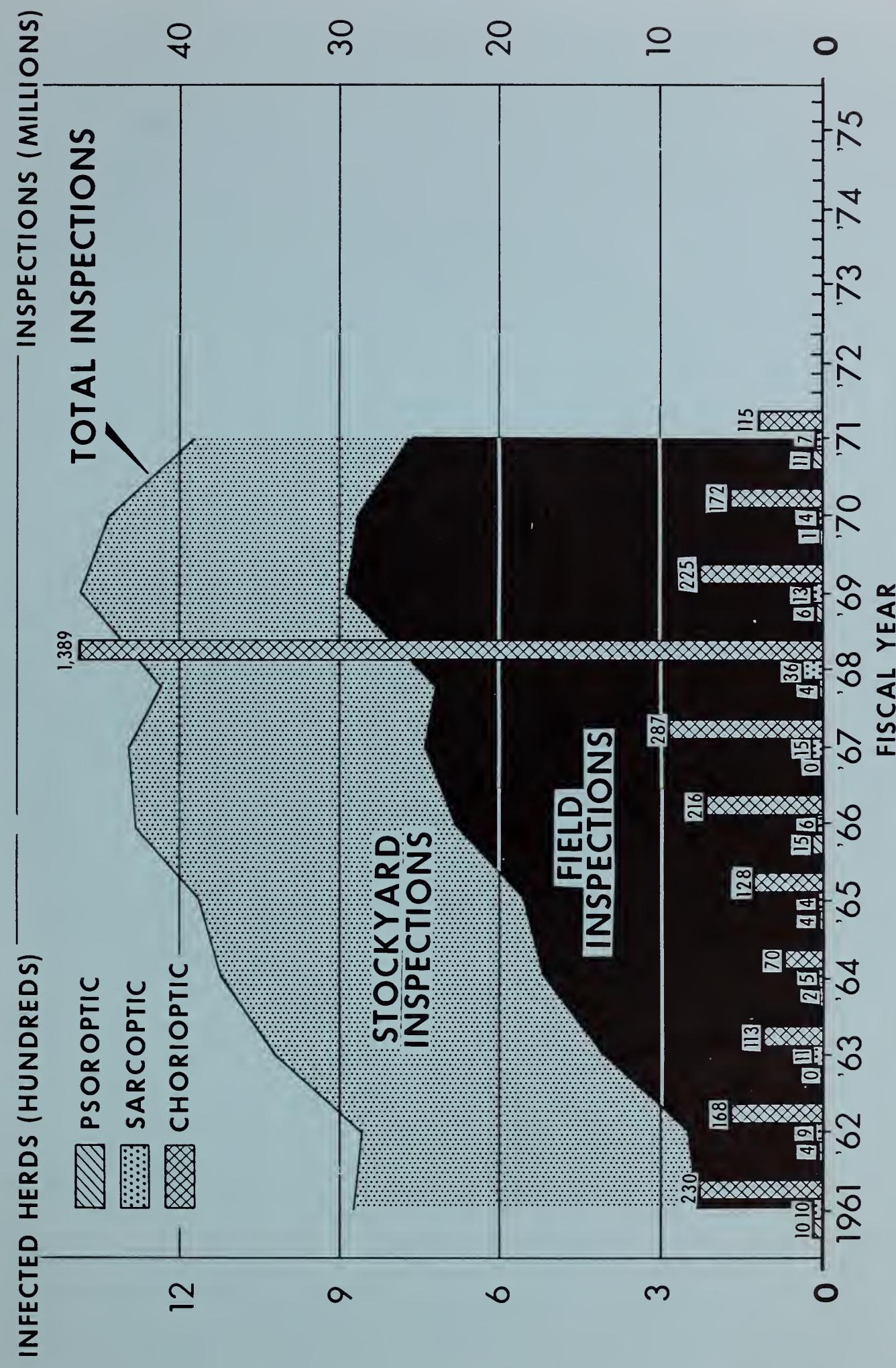
- ORDER BUYER
- LIVESTOCK MARKET
- OUTBREAK
- MOVEMENT OF ANIMALS

A total of 99 lots were found infected with chorioptic cattle scabies. They were reported from all sections of the country.

Four States extending from Nevada to New York and involving seven herds with 6,648 cattle were found infected with sarcoptic cattle scabies this fiscal year.

A total of 26,163,586 cattle were inspected on farms and ranches during FY 1971 as compared to 28,670,297 inspected during FY 1970.

CATTLE SCABIES ERADICATION



Psoroptic Cattle Scabies--Epidemiology

Series No. 1 included eight of the 11 FY 1971 outbreaks and was located in Nebraska and Iowa. Traceback of possible sources and exposed herds involved the States of South Dakota, Colorado, Kansas, Texas, Oklahoma, and Minnesota.

This series was discovered when a veterinary practitioner reported to a district veterinarian a skin condition resembling scabies in a Webster County, Iowa, herd (herd No. 1). Scrapings were examined by a diagnostician on November 18, 1970, who identified them as *Psoroptes* sp. Additional specimens were collected from this premises as well as another Webster County herd (herd No. 2) which had received animals from the same source and were confirmed as psoroptic cattle scabies on November 23, 1970, by the Parasite Reference Center at Beltsville, Md.

Traceback efforts revealed that infection was probably brought into these herds through a Nebraska distributing point on May 27, 1970. During the period when some of the 528 cattle from the probable source were in the yards, 1,932 cattle moved through to feeders. The yards were cleared of cattle by June 1, 1970, so traceback was concentrated on the period of May 25 to June 1. Six order buyers delivered cattle to the distributing point during this period. Exposed cattle were sold to 34 premises in four States. Fifty-nine cripples, tailenders, and other odd animals were resold through another distribution point to six purchasers. Inspection of these six premises resulted in negative findings.

Tracing of all sales from this distribution point resulted in the detection of herd No. 5 in Wayne County, Nebr., on December 14; herd No. 6 in Sioux County, Iowa, on December 28; herd No. 7 in Woodbury County, Iowa, on January 11; herd No. 8 in Plymouth County, Iowa, on February 3; herd No. 9 in Sioux County, Iowa, on February 8; and herd No. 10 in Webster County, Iowa, on April 5. These eight herds contained 1,804 cattle. Of these, 393 were fat cattle that were shipped to slaughter. All other infected and exposed cattle were treated using a permitted toxaphene dip in a spray-dip machine.

Psoroptic mites were detected in herds Nos. 7, 8, 9, and 10 upon reinspection of exposed premises. Lesions and mites were not found on animals in herd No. 9 until the second reinspection.

Herd No. 9 was diagnosed as infected February 8, 1971, after being exposed on May 25, 1970, a period of nearly 8½ months. This indicates the need for persistent effort to detect all infected herds.

Herd No. 10 was especially significant. The only possible contact with any other infected premises was through a livestock truck. This truck hauled infected animals on November 4 to slaughter. On the return trip, it stopped at a pasture for a load of Shorthorn breeding cattle. These animals were delivered to herd No. 10 in which cattle scabies was diagnosed on April 5. This premises had been under continuous surveillance and no other animals had been added to the herd.

Epidemiological efforts to detect psoroptic scabies on the ranch of origin for the 528 head were unsuccessful. Tracing and inspection of all other possible source herds also failed to discover the herd of origin of this outbreak.

Series No. 2 involved two Deaf Smith County, Tex., feedlots: one with 12,000 head; the other with 21,000 head. Psoroptic cattle scabies was confirmed in each on November 30, 1970, after the practicing veterinarian at each lot had sought the help of the veterinary medical officer in the area.

The infection at both feedlots was discovered in pens containing cattle owned by the same individual. The cattle had been assembled from a ranch and through an order buyer working in a Texas and an Oklahoma market.

Epidemiological investigation failed to reveal the source of the infection.

Series No. 3 of psoroptic cattle scabies occurred in a Hale County, Tex., feedlot with over 12,000 head of cattle. The infection was confirmed April 27, 1971, after the veterinary practitioner had requested the aid of the local veterinary medical officer.

The animals in the pen where the infection was discovered had been in the feedlot for 6 months. These particular animals had been on summer range in New Mexico and on wheat pasture in Texas before entering the feedlot.

Epidemiological investigation and inspection of herds in New Mexico, Texas, and Missouri failed to reveal either the source or any other foci of infection.

A total of 11,793 animals were dipped twice in a permitted toxaphene dip and 394 were dipped once and then held in quarantine and isolation for 28 days before shipment to slaughter. The dipping in this feedlot was completed May 31, 1971.

SARCOPTIC CATTLE SCABIES

The reported incidence of sarcoptic cattle scabies for FY 1971 was higher than for FY 1970 but less than the 36 herds reported infected in FY 1968.

The case reports of the infected herds indicate that we are dependent upon owners' requests for help for the finding of infected herds. Epidemiological investigation following initial disclosure of infection was important in locating the spread of infected and exposed cattle.

The geographic distribution of the reported outbreaks supports the premise of nationwide distribution.

Sarcoptic Cattle Scabies--Epidemiology

Series No. 1--Sarcoptic cattle scabies was confirmed in an Elko County, Nev., ranch herd in December 1970. The diagnosis was made when the owner sought veterinary help because of a skin condition in one of his bulls. This ranching operation consists of the Elko County, Nev., ranch with 1,659 head of cattle and a Davis County, Utah, ranch with 969 head of cattle. The respective States placed quarantines on each of the ranches. The cattle on each premises were treated twice with a permitted toxaphene dip in a spray-dip machine.

Approximately 1,500 head of cattle in three herds in two States were treated as exposed herds.

Series No. 2--A second Elko County, Nev., outbreak of sarcoptic cattle scabies was confirmed in February 1971. The owner had requested the aid of an ANH veterinarian because of a suspicious skin condition on some cattle.

A State quarantine was placed on the herd. The herd of 423 head was dipped twice in a permitted toxaphene dip using a spray-dip machine.

A total of six Nevada herds with 5,292 head and two herds in two other States were treated as exposed herds.

Series No. 3--Sarcoptic cattle scabies was confirmed in a Weber County, Utah, herd of 421 head in February 1971. The herd was found infected through routine inspection.

A State quarantine was established and the herd was treated twice with a permitted toxaphene dip using a spray-dip machine.

Series No. 4--A third Elko County, Nev., outbreak of sarcoptic cattle scabies was confirmed during March 1971. Inspection of this ranching operation was made because of exposure to the second Elko County outbreak.

A State quarantine was established.

The ranching operation contained three separate ranches. Approximately 3,000 head of cattle were treated twice with a permitted toxaphene dip.

Shipments had been made from this ranching operation to four ranches in Nevada and five ranches in Idaho and California. Infected cattle were found on two premises receiving cattle from the sales of this ranching operation. These premises were located in Cassia County, Idaho, and Elko County, Nevada.

Series No. 5--Sarcoptic cattle scabies was confirmed in a Phelps County, Nebr., herd of 130 head of cattle in March 1971.

A State quarantine was established for the herd.

A total of 211 head in this herd and the three herds which had purchased bulls from it were each treated twice with a permitted toxaphene dip using a spray-dip machine.

Series No. 6--Sarcoptic cattle scabies was confirmed in a Dutchess County, N. Y., herd of 46 head in April 1971.

The diagnosis was made when a Massachusetts dealer offered the New York animal to a New York slaughter house. Massachusetts officials were notified; and, in turn, they notified New York officials. A hold order was placed on all cattle from the farm.

The owner had had his herd treated with Ciodrin before he was notified of the infection. The herd was then officially treated twice using lime-sulfur in a spray-dip machine with a 10-day interval.

Due to lack of records, the epidemiological study cannot be completed. The herd will be inspected during the fall and winter. The hold order has been removed from the farm.

SARCOPTIC SCABIES IN LLAMAS

A herd of four llamas located in Ada County, Idaho, was found infected with sarcoptic mites in August 1970.

The llamas were treated twice with an 11-day interval between treatments.

This is the second consecutive year that sarcoptic scabies has been reported in llamas.

CHORIOPTIC CATTLE SCABIES FOUND AT LIVESTOCK SHOWS

NATIONAL WESTERN STOCK SHOW, DENVER, COLO.--In January 1971, chorioptic mites were collected from 32 lots of cattle from the States of Colorado (1), Georgia (1), Illinois (1), Indiana (3), Iowa (6), Kansas (4), Massachusetts (1), Minnesota (1), Michigan (1), Nebraska (1), North Dakota (1), Ohio (1), Oklahoma (4), Texas (4), and Washington (2).

ARIZONA NATIONAL LIVESTOCK SHOW, PHOENIX --In January 1971, chorioptic mites were collected from one lot of California cattle.

SOUTHEAST LOUISIANA DISTRICT LIVESTOCK SHOW, ARABI--In February 1971, chorioptic mites were collected from two lots of Louisiana cattle.

LOUISIANA-ST. TAMMANY JR. LIVESTOCK SHOW, COVINGTON--In February 1971, chorioptic mites were collected from one lot of Louisiana cattle.

LOUISIANA STATE UNIVERSITY LIVESTOCK SHOW, BATON ROUGE--In March 1971, chorioptic mites were collected from 20 lots of cattle from Louisiana (15), Mississippi (2), and Texas (3).

PSOROPTIC CATTLE SCABIES
Program Activities Fiscal Years 1961 Through 1971

Fiscal Year	INFECTED			
	States	Counties	Herds 1/	Lots at public stkyds.
	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>
1961	5	8	10	3
1962	3	4	4	1
1963	--	--	--	--
1964	2	2	2	1
1965	4	4	4	--
1966	3	9	15	1
1967	--	--	--	--
1968	2	4	4	1
1969	3	5	6	1
1970	1	1	1	--
1971	3	7	11	--

1/ Includes infected lots located at public stockyards.

Fiscal Year	INSPECTIONS		DIPPINGS	
	At public stockyards	Other	At public Stockyards	Other
	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>
1961	21,334,686	7,660,685	46,005	234,293
1962	20,438,908	8,160,029	42,197	123,549
1963	20,168,561	13,464,758	69,772	129,882
1964	19,912,734	17,260,340	43,333	40,827
1965	20,508,076	18,389,099	50,132	77,027
1966	20,048,390	22,509,512	52,501	247,960
1967	18,491,304	24,361,958	49,185	105,820
1968	17,148,967	23,869,523	40,105	106,692
1969	16,615,776	29,425,590	43,672	118,140
1970	15,632,899	28,670,897	2,408	28,290
1971	14,019,291	25,321,574	24,761	125,602

CATTLE SCABIES, Fiscal Year 1971

State or Territory	INFECTED						CATTLE INSPECTED	CATTLE DIPPED		
	PSOROPTIC		CHORIOPTIC		SARCOPTIC					
	Herds	Cattle	Herds	Cattle	Herds	Cattle				
	Number	Number	Number	Number	Number	Number	Number	Number		
Alabama -----	--	--	--	--	--	--	826,400	--		
Alaska -----	--	--	--	--	--	--	610	--		
Arizona -----	--	--	1	2	--	--	589,991	47		
Arkansas -----	--	--	--	--	--	--	--	--		
California -----	--	--	11	2,384	--	--	4,145,712	819		
Colorado -----	--	--	2	754	--	--	745,811	1,322		
Connecticut -----	--	--	--	--	--	--	772	--		
Delaware -----	--	--	--	--	--	--	9,169	--		
Florida -----	--	--	--	--	--	--	679,811	--		
Georgia -----	--	--	1	3	--	--	969,145	375		
Hawaii -----	--	--	--	--	--	--	43,468	--		
Idaho -----	--	--	--	--	--	--	441,967	3,472		
Illinois -----	--	--	1	5	--	--	260	570		
Indiana -----	--	--	3	26	--	--	--	262		
Iowa -----	7	1,205	7	300	--	--	15,613	5,606		
Kansas -----	--	--	5	499	--	--	1,413,668	1,113		
Kentucky -----	--	--	--	--	--	--	27	--		
Louisiana -----	--	--	24	33	--	--	2,364	581		
Maine -----	--	--	--	--	--	--	--	--		
Maryland -----	--	--	--	--	--	--	4	--		
Massachusetts -----	--	--	1	7	--	--	8	--		
Michigan -----	--	--	1	1	--	--	--	--		
Minnesota -----	--	--	1	8	--	--	1,988	--		
Mississippi -----	--	--	2	9	--	--	44,940	9		
Missouri -----	--	--	--	--	--	--	13,191	--		
Montana -----	--	--	--	--	--	--	1,259,716	--		
Nebraska -----	1	500	2	280	1	130	123,854	1,406		
Nevada -----	--	--	--	--	4	5,678	58,839	20,002		
New Hampshire -----	--	--	--	--	--	--	--	--		
New Jersey -----	--	--	--	--	--	--	150	--		
New Mexico -----	--	--	--	--	--	--	143,289	--		
New York -----	--	--	--	--	1	451	47	94		
North Carolina -----	--	--	--	--	--	--	--	--		
North Dakota -----	--	--	2	345	--	--	100,788	1,001		
Ohio -----	--	--	1	11	--	--	--	--		
Oklahoma -----	--	--	7	71	--	--	380,789	--		
Oregon -----	--	--	2	220	--	--	170,514	488		
Pennsylvania -----	--	--	1	20	--	--	20	--		
Rhode Island -----	--	--	--	--	--	--	198	--		
South Carolina -----	--	--	--	--	--	--	61,008	--		
South Dakota -----	--	--	--	--	--	--	31,659	--		
Tennessee -----	--	--	1	500	--	--	1,055,620	500		
Texas -----	3	37,000	23	367	--	--	10,905,375	84,249		
Utah -----	--	--	--	--	1	421	879,397	1,685		
Vermont -----	--	--	8	324	--	--	485	571		
Virginia -----	--	--	--	--	--	--	--	--		
Washington -----	--	--	5	551	--	--	452,584	930		
West Virginia -----	--	--	--	--	--	--	423	--		
Wisconsin -----	--	--	3	263	--	--	8,689	--		
Wyoming -----	--	--	--	--	--	--	554,846	--		
Puerto Rico -----	--	--	--	--	--	--	27,602	--		
Virgin Islands -----	--	--	--	--	--	--	2,775	--		
Totals:	11	38,705	115	6,983	7	6,680	26,163,586	125,602		

SCABIES SUPPORT ACTIVITIES

Animal Health Laboratories, Parasitology Laboratory

The Animal Health Parasitology Laboratory provided support through identification of the following submissions during FY 1971:

<u>Ectoparasite</u>	<u>Submissions</u>
Ticks	2,852
Mites	265
Misc. (lice, grubs, fleas, etc.)	103
Screwworm larva	741
Blow Fly larvae	1,954

Chorioptic Mites Collected From Several Species of Animals in Addition to Cattle in Various States

SHEEP: Chorioptic mites were collected from six lots of sheep--California (2), Connecticut (1), Iowa (1), Oregon (1), and Utah (1).

HORSES: Chorioptic mites were collected from one lot of horses in New Mexico.

Psoroptic Mites Collected From Several Species of Animals in Various States

CATTLE: Psoroptic mites were collected from 11 lots of cattle--Iowa (7), Nebraska (1), and Texas (3).

GOATS: Psoroptic mites were collected from 18 lots of goats in Texas.

Both psoroptic and chorioptic mites were collected from one lot of goats in Maryland.

Sarcoptic Mites Collected From Swine in Various States

Sarcoptic mites were collected from 59 lots of swine--Colorado (13), Hawaii (1), Idaho (13), Kentucky (1), Maryland (2), Massachusetts (1), Montana (1), North Carolina (1), North Dakota (1), Oklahoma (6), Oregon (1), South Dakota (5), Texas (3), Virginia (1), Washington (6), and Wisconsin (3).

Sarcoptic Mites Collected From Several Species of Animals in Addition to Swine in Various States

CATTLE: Sarcoptic mites were collected from seven lots of cattle--Nebraska (1), Nevada (4), New York (1), and Utah (1).

LLAMAS: Sarcoptic mites were collected from one lot of llamas in Idaho.

FOXES: Sarcoptic mites were collected from two lots of foxes in West Virginia.

COYOTES: Sarcoptic mites were collected from one lot of coyotes in Texas.

Active Laboratory Support

The following analytical work was performed by the Animal Health Chemical Reference Laboratory in support of Animal Health Programs.

<u>Dip Analysis</u>	<u>Samples</u>	<u>Test/Sample</u>	<u>Replicates</u>	<u>Total</u>
1. Toxaphene quan. anal.	2,949	1	4	11,796
2. Toxaphene EC quan. anal.	32	1	4	128
3. Toxaphene (infrared) quan. anal.	4	2	3	24
4. Co-Ral quan. anal.	247	1	4	988
5. Delnav	2,869	1	3	8,607
6. Lindane (infrared) quan. anal.	1	1	2	2
7. Dursban IR quan. anal.	10	1	3	30
8. Malathion IR quan. anal.	38	1	3	114
9. Imidan IR quan. anal.	38	1	3	114
10. Delnav development	64	3	3	576
11. Ciodrin quan. anal.	6	1	3	18
12. Arsenic quan. anal.	1,973	2	3	11,838
13. Total arsenic in dips-- quan. anal.	422	1	3	1,266
14. Arsenic in tissue--quan. anal.	81	1	3	243
15. Arsenical contaminant--IR anal.	1	3	3	9
16. Defoaming agent test for arsenical vats	3	3	3	27
17. Lime-sulfur quan. anal.	34	1	3	102
18. Sodium-orthophenylphenate quan. anal.	2	2	3	12
19. Efficacy of protective hand creams against pesticides	3	8	2	48
20. Water hardness	5	2	4	40
21. Specific gravity	50	1	2	<u>100</u>
Total Analysis				36,082

NONPARASITIC MITES AND OTHER MISCELLANEOUS COLLECTIONS

Nonparasitic mites are frequently found on cattle, sheep, and other animals being inspected for scabies. These mites do not cause scabies but can easily be confused with those that cause the disease, particularly if it is suspected that the flock or herd may be infected. The following nonparasitic mites and other miscellaneous parasites were reported during Fiscal Year 1971.

State	County	Date	Host	Nonparasitic mites or miscellaneous parasites
CALIFORNIA	Stanislaus	August 11, 1970	Dog	Cuterebra - larva found under skin of rodents.
COLORADO	Weld	March 10, 1971	do	Chrysomelidae - leaf feeding beetle.
FLORIDA	Okeechobee	March 5, 1971	do	<i>Ornithonyssus bacoti</i> - tropical rat mite.
IOWA	Floyd	September 18, 1970	Horse	Acaridae - grain mite.
Do	Cedar	--	--	Tarsonemidae - plant mite.
Do	Clayton	March 26, 1971	Sheep	Acaridae - grain mite.
Do	Adams	April 21, 1971	Cow	Do.
KENTUCKY	Washington	August 10, 1970	Sheep	Do.
MARYLAND	Washington	January 21, 1971	do	Tarsonemidae - plant mite.
MINNESOTA	Dakota	January 14, 1971	Cow	Acaridae - grain mite.
Do	do	January 20, 1971	do	Do.
Do	do	January 22, 1971	do	Do.
Do	do	January 29, 1971	do	Do.
Do	Clearwater	April 7, 1971	do	<i>Oribatei</i> - soil mite.
MISSISSIPPI	Hinds	September 1970	Dog	Acaridae - grain mite.
NORTH DAKOTA	Ward	--	--	Do.
Do	Cass	March 23, 1971	Cow	Do.
OKLAHOMA	Coal	March 18, 1971	Sheep	<i>Oribatei</i> - soil mite.
TEXAS	Cherokee	January 30, 1971	Cow	Tetranychidae - plant mite.
Do	Cameron	April 15, 1971	Man	<i>Oribatei</i> - soil mite.
VIRGINIA	Rappahannock	January 27, 1971	Sheep	Acaridae - grain mite.
Do	Loudoun	February 24, 1971	do	Tarsonemidae - plant mite.
Do	do	March 4, 1971	do	Do.
WISCONSIN	Barron	October 15, 1970	Cow	Do.
Do	St. Croix	February 17, 1971	do	<i>Veigaiaidae</i> .

MACERATION-FLOTATION PROCEDURE
Fiscal Year 1971

STATE	TOTAL		CATTLE		SHEEP		SWINE		HORSES		GOATS		DOGS		OTHER	
	Field	Stkyd														
	Number															
ALABAMA -----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ALASKA -----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ARIZONA -----	14	16	12	16	2	--	--	--	--	--	--	--	--	--	--	--
ARKANSAS -----	3	2	2	2	1	--	--	--	--	--	--	--	--	--	--	--
CALIFORNIA -----	73	74	63	64	7	6	2	3	1	1	--	--	--	--	--	--
COLORADO -----	60	--	56	--	1	--	1	--	2	--	--	--	--	--	--	--
CONNECTICUT -----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DELAWARE -----	1	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--
FLORIDA -----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GEORGIA -----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HAWAII -----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IDAHO -----	34	20	18	20	2	--	7	--	3	--	--	2	--	2	--	--
ILLINOIS -----	12	--	6	--	6	--	--	--	--	--	--	--	--	--	--	--
INDIANA -----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IOWA -----	6	9	3	8	3	1	--	--	--	--	--	--	--	--	--	--
KANSAS -----	47	40	40	28	7	8	--	--	--	--	--	--	--	--	--	4
KENTUCKY -----	10	--	6	--	4	--	--	--	--	--	--	--	--	--	--	--
LOUISIANA -----	84	--	81	--	3	--	--	--	--	--	--	--	--	--	--	--
MAINE -----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MARYLAND -----	25	--	21	--	4	--	--	--	--	--	--	--	--	--	--	--
MASSACHUSETTS -----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MICHIGAN -----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MINNESOTA -----	1	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--
MISSISSIPPI -----	10	--	5	--	5	--	--	--	--	--	--	--	--	--	--	--
MISSOURI -----	1	1	--	1	1	--	--	--	--	--	--	--	--	--	--	--
MONTANA -----	16	3	14	3	1	--	--	--	--	--	--	--	--	1	--	--
NEBRASKA -----	23	6	22	6	1	--	--	--	--	--	--	--	--	--	--	--
NEVADA -----	44	--	44	--	--	--	--	--	--	--	--	--	--	--	--	--
NEW HAMPSHIRE -----	1	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--
NEW JERSEY -----	4	--	--	--	4	--	--	--	--	--	--	--	--	--	--	--
NEW MEXICO -----	15	--	10	--	5	--	--	--	--	--	--	--	--	--	--	--
NEW YORK -----	1	3	--	--	1	3	--	--	--	--	--	--	--	--	--	--
NORTH CAROLINA -----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTH DAKOTA -----	10	3	10	2	--	1	--	--	--	--	--	--	--	--	--	--
OHIO -----	31	1	2	1	1	--	22	--	--	--	--	--	--	4	--	2
OKLAHOMA -----	11	6	9	6	2	--	--	--	--	--	--	--	--	--	--	--
OREGON -----	37	29	31	25	4	2	1	1	--	1	1	--	--	--	--	--
PENNSYLVANIA -----	5	34	2	4	3	30	--	--	--	--	--	--	--	--	--	--
RHODE ISLAND -----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SOUTH CAROLINA -----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SOUTH DAKOTA -----	7	54	6	37	1	6	--	--	11	--	--	--	--	--	--	--
TENNESSEE -----	3	--	3	--	--	--	--	--	--	--	--	--	--	--	--	--
TEXAS -----	107	18	90	7	6	--	--	--	--	--	--	11	11	--	--	--
UTAH -----	6	4	4	2	--	--	--	2	--	--	1	--	--	1	--	--
VERMONT -----	284	--	284	--	--	--	--	--	--	--	--	--	--	--	--	--
VIRGINIA -----	39	--	--	--	39	--	--	--	--	--	--	--	--	--	--	--
WASHINGTON -----	24	--	3	--	20	--	1	--	--	--	--	--	--	--	--	--
WEST VIRGINIA -----	10	--	4	--	5	--	1	--	--	--	--	--	--	--	--	--
WISCONSIN -----	37	--	20	--	8	--	3	--	1	--	--	--	5	--	--	--
WYOMING -----	12	--	8	--	4	--	--	--	--	--	--	--	--	--	--	--
PUERTO RICO -----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VIRGIN ISLANDS -----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SUBTOTALS:	1,108	323	879	232	154	57	38	17	7	2	13	11	12	--	5	4
TOTALS:	1,431		1,111		211		55		9		24		12		9	

PESTICIDES

Increased emphasis continues to be placed on environmental quality and control. Every effort should be made to minimize the danger to man and animal through the safe use of pesticides. It is again stressed that vats and spray-dip machines be discharged into sumps which are protected to prevent contamination of the environment which might be dangerous to children, wildlife, and livestock.

The results of severe restrictions being placed on the use and disposal of pesticides could hamper several of our eradication programs. Use of outside resources such as sewer managers, wildlife personnel, or soil conservation experts may provide valuable information on pesticide disposal. Disposal procedures should be reviewed regularly to prevent and correct unsafe practices.

METHOD OF PESTICIDE USE AND DISPOSAL

METHOD OF APPLICATION	TOXAPHENE	LIME-SULFUR	ARSENIC	COUMAPHOS	DELNAV	CIODRIN	CARBARYL
Permanent							
Dip Vat	18	2	59	3	6	1	--
Portable							
Dip Vat	10	--	--	--	--	--	--
Spray-Dip							
Machine	13	--	--	1	--	--	--
Hand-Held							
Nozzle	1	--	--	2	2	--	--
METHOD OF DISPOSAL							
Spray Barn &							
Pens	3	1	--	--	1	--	--
Pit	14	--	33	--	1	--	--
Vat Pen	--	--	16	--	2	--	--
Open Field	16	--	8	3	4	1	--
Sewer	9	1	1	--	--	--	--
Drainage Ditch	3	--	1	--	--	--	--
City Dump	--	--	--	--	--	--	--

Pesticide Disposal

The following is a summary as to how several California counties are attempting to bring pollution under control.

Imperial County has comprehensive control of pesticide disposal through Agricultural Pest Control Advisors licensed by the Commissioner. Most pesticides are applied by commercial applicators who estimate accurately their requirements in advance. If there is any pesticide remaining, they generally use it up with one or two final passes with their equipment (planes, sprays, etc.) so that there is rarely any used pesticide to dispose of. One large operator has

numerous items of equipment and uses a special method to dispose of used pesticide residues in tank-trucks, etc. The equipment is washed at a depot and the residues run off into a large concrete tank to avoid seepage problems. Here the sediment dries in the sun and the contents of the tank are shipped on a special permit out of the county to designated industrial dumping sites. So far, residues from small-applicators' equipment present no disposal problems. In cases where fairly large quantities of used pesticide have to be disposed of on individual farms, as in the case of toxaphene spraying, sump-pits are dug to collect runoff. Full, partly full, or empty pesticide containers must be kept under lock and key until used or disposed of to avoid danger to persons, crops, animals, or property. Officials inspect farms for improper methods of disposal of used pesticides but no instances were reported during the interviews.

The method of disposal of pesticide in containers is under better control, being restricted to designated dumping sites (six in Imperial County, two in Riverside County, numerous in San Bernardino County). The containers are marked (Imperial County) with the dealer's license number and with the number of the applicator's permit. Containers are inspected by officials before disposal and punctured or broken before dumping. Farms are inspected for illegally dumped containers and offenders can be traced back through the numbering system. Isolated containers picked up under trees, etc. are also handed over to the dump sites by officials. Pesticide baits can only be laid down and disposed of under similar restrictions.

It is perhaps worth mentioning that the danger of used pesticides finding their way into water supplies is reduced by prohibiting their use when fields are being watered or have water standing in them or when "drift" is likely. Disposal of used pesticide bags by burning is also restricted due to air pollution.

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